

CLAIMS

Claim 1. A method for reproducing digital data from a signal record medium, comprising:

reading out the recording control information arrayed in a playback mode control signal area for controlling the mode of the playback state of said signal record medium and/or in each header of the digital data divided into sectors; and

performing a pre-set conversion operation on an analog signal, converted from said digital data by D/A conversion, based on said recording control information.

Claim 2. The signal reproducing method as claimed in claim 1 wherein a pre-set conversion operation is performed on said digital data based on said recording control information.

Claim 3. The signal reproducing method as claimed in claim 2 wherein the pre-set conversion operation on said digital data is the operation of digitally descrambling said digital data.

Claim 4. The signal reproducing method as claimed in claim 2 wherein said digital data is ciphered data and said pre-set conversion operation on said digital data is the operation of deciphering the digital data using at least a portion of the recording control information.

Claim 5. The signal reproducing method as claimed in claim 2 wherein said digital data is ciphered data and said pre-set conversion operation on said digital data is the operation of deciphering said digital data by decoding means specified by at

least a portion of said recording control information.

Claim 6. The signal reproducing method as claimed in claim 1 wherein said analog signal is an analog video signal and wherein the pre-set operation of conversion into said analog video signals is an operation of arraying a combination signal of plural pseudo synchronization pulses and plural white peak signals across plural horizontal periods in a vertical blanking period of said analog video signal.

Claim 7. The signal reproducing method as claimed in claim 1 wherein said analog signal is an analog color video signal and wherein said pre-set conversion operation for said analog color video signals is the operation of changing the phase of at least a portion of color burst signals.

Claim 8. The signal reproducing method as claimed in claim 1 wherein the pre-set conversion operation is the operation of arraying a signal coded with plural bits at a pre-set position in the analog signal.

Claim 9. The signal reproducing method as claimed in claim 8 wherein said analog signal is an analog video signal and said pre-set position is a pre-set horizontal period within a vertical blanking period of said analog video signal.

Claim 10. The signal reproducing method as claimed in claim 8 wherein said coded signal includes a recording inhibiting signal and/or a generation limitation instructing signal instructing limitation on the recording generation.

Claim 11. An apparatus for reproducing digital data from a signal recording medium, comprising:

means for reading out the recording control information arrayed in a playback mode control signal area for controlling the mode of the playback state of said signal recording medium and/or in each header of the digital data divided into sectors; and

means for performing a pre-set conversion operation on an analog signal, converted from said digital data by D/A conversion, based on said recording control information.

Claim 12. The signal reproducing apparatus as claimed in claim 11 wherein a pre-set conversion operation is performed on said digital data based on said recording control information.

Claim 13. The signal reproducing apparatus as claimed in claim 12 wherein the pre-set conversion operation on said digital data is the operation of digitally descrambling said digital data.

Claim 14. The signal reproducing apparatus as claimed in claim 12 wherein said digital data is ciphered data and said pre-set conversion operation on said digital data is the operation of digitally converting said digital data.

Claim 15. The signal reproducing apparatus as claimed in claim 12 wherein said digital data is ciphered data and said pre-set conversion operation on said digital data is the operation of deciphering said digital data by decoding means specified by at least a portion of said recording control information.

Claim 16. The signal reproducing apparatus as claimed in claim 11

wherein said analog signal is an analog video signal and wherein the pre-set operation of conversion into said analog video signals by said conversion means is an operation of arraying a combination signal of plural pseudo synchronization pulses and plural white peak signals across plural horizontal periods in a vertical blanking period of said analog video signal.

Claim 17. The signal reproducing apparatus as claimed in claim 11 wherein said analog signal is an analog color video signal and wherein said pre-set conversion operation on said analog color video signals by said conversion means is the operation of changing the phase of at least a portion of color burst signals.

Claim 18. The signal reproducing apparatus as claimed in claim 11 wherein the pre-set conversion operation on said analog color video signals by said conversion means is the operation of arraying a signal coded with plural bits at a pre-set position in the analog signal.

Claim 19. The signal reproducing apparatus as claimed in claim 18 wherein said analog signal is an analog video signal and said pre-set position is a pre-set horizontal period within a vertical blanking period of said analog video signal.

Claim 20. The signal reproducing apparatus as claimed in claim 18 wherein said coded signal includes a recording inhibiting signal and/or a generation limitation instructing signal instructing limitation on recording generation.

Claim 21. A method for recording a signal comprising:

generating the recording control information for supervising recording of said signal on a signal record medium;

ciphering said signal using at least a part of said recording control information as the key information;

arraying said recording control information at a pre-set position of a playback mode control signal area designed to control the mode of the playback state of said signal record medium and/or at a pre-set position of each recording unit of said signal on said signal record medium; and

recording on said signal record medium said recording control information arrayed at the pre-set position of said playback mode control signal area and/or the pre-set position of each recording unit along with said ciphered signal.

Claim 22. The signal recording method as claimed in claim 21 wherein said signal is digital data or an analog signal.

Claim 23. A signal recording apparatus comprising:

recording control information generating means for generating the recording control information for supervising the recording of said signal on a signal record medium;

ciphering means for ciphering the signal using at least a portion of said recording control signal as the key information;

annexing means for annexing said recording control information at a playback mode control signal area designed to control the mode of the playback state from said signal record medium and/or at a pre-set position of each recording unit of said signal on said

signal record medium; and

recording means for recording the signal on said signal record medium;

wherein said recording control information arrayed at the playback mode control signal area and/or at a pre-set position of each recording unit is recorded on said signal record medium along with the ciphered signal.

Claim 24. The signal recording apparatus as claimed in claim 23 wherein said signal is digital data or an analog signal.

Claim 25. A method for reproducing a ciphered signal from a signal record medium comprising:

reading out the recording control information arrayed at a playback mode control signal area for controlling the mode of the playback state from said signal record medium and/or at a pre-set position of each recording unit of the signal on said signal record medium; and

deciphering said ciphered signal using at least a portion of said recording control information as the key information for reproducing said signal.

Claim 26. The signal reproducing method as claimed in claim 25 wherein said signal is digital data or an analog signal.

Claim 27. The signal reproducing method as claimed in claim 25 wherein a pre-set conversion is performed on the decoded and reproduced signal using at least a portion of said recording control information as the key information.

Claim 37. The signal reproducing apparatus as claimed in claim 35

analog signal converted by D/A conversion from said digital data based on said transmission control operation.

Claim 42. The signal transmission method as claimed in claim 41 wherein the pre-set conversion to said digital data is the operation of digitally scrambling said digital data.

Claim 43. The signal transmission method as claimed in claim 41 wherein the said digital data is ciphered and wherein said pre-set conversion to said digital data is the operation of deciphering said digital data using at least a portion of said transmission control information as the key information.

Claim 44. The signal transmission method as claimed in claim 41 wherein the digital data is the ciphered data and wherein the pre-set conversion operation on said digital data is the operation of deciphering said digital data by decoding means instructed by at least a portion of said recording control information.

Claim 45. The signal transmission method as claimed in claim 41 wherein said analog signal is an analog video signal and wherein the pre-set operation of conversion into said analog video signals is an operation of arraying a combination signal of plural pseudo synchronization pulses and plural white peak signals across plural horizontal periods in a vertical blanking period of said analog video signal.

Claim 46. The signal transmission method as claimed in claim 41 wherein said analog signal is an analog color video signal and wherein said pre-set conversion operation on said analog color

video signals is the operation of changing the phase of at least a portion of color burst signals.

Claim 47. The signal transmission method as claimed in claim 41 wherein the pre-set conversion operation on said analog color video signals is the operation of arraying a signal coded with plural bits at a pre-set position in the analog signal.

Claim 48. The signal transmission method as claimed in claim 47 wherein said analog signal is an analog color video signal and said pre-set position is a pre-set horizontal period within a vertical blanking period of said analog video signal.

Claim 49. The signal transmission method as claimed in claim 48 wherein said coded signal includes a recording inhibiting signal and/or a generation limitation instructing signal instructing limitation on the recording generation.

Claim 50. A signal transmission apparatus for receiving and reproducing transmitted digital data comprising:

means for taking out the transmission control information for supervising transmission ancillary to the transmitted digital data;

means for taking out the transmission control information for supervising transmission ancillary to transmitted digital data; and

means for performing pre-set conversion on said digital data and an analog signal converted by D/A conversion from said digital data based on said transmission control operation.

Claim 51. The signal transmission apparatus as claimed in claim 50 wherein the pre-set conversion operation on said digital data by

said conversion means is the operation of digitally scrambling said digital data.

Claim 52. The signal transmission apparatus as claimed in claim 50 wherein the said digital data is ciphered and wherein said pre-set conversion operation on said digital data by said pre-set conversion means is the operation of deciphering said digital data using at least a portion of said transmission control information as the key information.

Claim 53. The signal transmission apparatus as claimed in claim 50 wherein the digital data is the ciphered data and wherein the pre-set conversion operation on said digital data by said conversion means is the operation of deciphering said digital data by decoding means instructed by at least a portion of said recording control information.

Claim 54. The signal transmission apparatus as claimed in claim 50 wherein said analog signal is an analog video signal and wherein the pre-set operation of conversion on said analog video signals by said conversion means is an operation of arraying a combination signal of plural pseudo synchronization pulses and plural white peak signals across plural horizontal periods in a vertical blanking period of said analog video signal.

Claim 55. The signal transmission apparatus as claimed in claim 50 wherein said analog signal is an analog color video signal and wherein said pre-set conversion operation for said analog color video signals by said conversion means is the operation of changing

the phase of at least a portion of color burst signals.

Claim 56. The signal transmission apparatus as claimed in claim 50 wherein said pre-set conversion operation on said analog signal by said conversion means is the operation of arraying a signal coded with plural bits at a pre-set position in the analog signal.

Claim 57. The signal transmission apparatus as claimed in claim 50 wherein said analog signal is an analog color video signal and wherein said pre-set position is a pre-set horizontal period within a vertical blanking period of said analog video signal.

Claim 58. The signal transmission apparatus as claimed in claim 58 wherein said coded signal includes a transmission inhibiting signal and/or a generation limitation instructing signal instructing limitation on the transmission generation.

Claim 59. A signal transmission method comprising:

generating the transmission supervising information for supervising signal transmission;

ciphering said signal using at least a portion of said transmission control information as the key information; and

transmitting the ciphered signal and also transmitting the transmission control information ancillary to the ciphered signal.

Claim 60. The signal transmission method as claimed in claim 59 wherein said signal is digital data or an analog signal.

Claim 61. A signal transmission apparatus comprising:

transmission control information generation means for generating the transmission control information for supervising signal

transmission;

ciphering means for ciphering the signal using at least a portion of the transmission control information as the key information;

annexing means for annexing said transmission control information to said ciphered signal; and

transmission means for transmitting the transmission control information annexed to said ciphered signal along with the ciphered signal.

Claim 62. The signal transmission apparatus as claimed in claim 61 wherein said signal is digital data or an analog signal.

Claim 63. A signal transmission method for receiving a transmitted ciphered signal and reproducing the received signal, comprising:

taking out the transmission control signal for supervising transmission ancillary to the ciphered signal; and

deciphering said signal using at least a portion of said transmission control information as the key information.

Claim 64. The signal transmission method as claimed in claim 63 wherein said signal is digital data or an analog signal.

Claim 65. The signal transmission method as claimed in claim 63 wherein a pre-set conversion is performed on the decoded and reproduced signal using at least a portion of said transmission control information as the key information.

Claim 66. The signal transmission method as claimed in claim 65 wherein the decoded and reproduced signal is an analog video signal

and wherein said pre-set conversion into said analog video signal is an operation of arraying a combination signal of plural pseudo synchronization pulses and plural white peak signals over plural horizontal periods within a vertical blanking period of the analog video signal.

Claim 67. The signal transmission method as claimed in claim 65 wherein said decoded and reproduced signal is an analog color video signal and wherein said pre-set conversion operation on said analog color video signals is the operation of changing the phase of at least a portion of color burst signals.

Claim 68. The signal transmission method as claimed in claim 65 wherein the decoded and reproduced signal is an analog signal and wherein said pre-set conversion operation on said analog signal is the operation of arraying a signal coded with plural bits at a pre-set position in the analog signal.

Claim 69. The signal transmission method as claimed in claim 68 wherein said analog signal is an analog video signal and said pre-set position is a pre-set horizontal period within a vertical blanking period of said analog video signal.

Claim 70. The signal transmission method as claimed in claim 68 wherein said coded signal includes a transmission inhibiting signal and/or a generation limitation instructing signal instructing limitation on the transmission generation.

Claim 71. A signal transmission apparatus for receiving and reproducing a transmitted ciphered signal, comprising:

take-ont means for taking out the transmission control information for supervising transmission ancillary to the ciphered signal; and

decoding means for deciphering said signal using at least a portion of said transmission control information as the key information.

Claim 72. The signal transmission apparatus as claimed in claim 71 wherein said signal is digital data or an analog signal.

Claim 73. The signal transmission apparatus as claimed in claim 71 wherein a pre-set conversion is performed on the decoded and reproduced signal using at least a portion of said transmission control information as the key information.

Claim 74. The signal transmission apparatus as claimed in claim 73 wherein the decoded and reproduced signal is an analog video signal and wherein said pre-set conversion into said analog video signal by said conversion means is an operation of arraying a combination signal of plural pseudo synchronization pulses and plural white peak signals over plural horizontal periods within a vertical blanking period of the analog video signal.

Claim 75. The signal transmission apparatus as claimed in claim 73 wherein said decoded and reproduced signal is an analog color video signal and wherein said pre-set conversion operation on said analog color video signals by said conversion means is the operation of changing the phase of at least a portion of color burst signals.

Claim 76. The signal transmission apparatus as claimed in claim 73 wherein the decoded and reproduced signal is an analog signal and wherein said pre-set conversion operation on said analog signal by said conversion means is the operation of arraying a signal coded with plural bits at a pre-set position in the analog signal.

Claim 77. The signal transmission apparatus as claimed in claim 76 wherein said analog signal is an analog video signal and said pre-set position is a pre-set horizontal period within a vertical blanking period of said analog video signal.

Claim 78. The signal transmission apparatus as claimed in claim 76 wherein said coded signal includes a transmission inhibiting signal and/or a generation limitation instructing signal instructing limitation on the transmission generation.

Claim 79. A signal record medium wherein the recording control information for supervising recording of a signal on a signal record medium is recorded at a playback mode control signal area for controlling the mode of the playback state and/or a pre-set position of each recording unit of the signal, and wherein at least a portion of the recording control information is ciphered and recorded using at least a portion of the recording control information as the key information.

Claim 80. The signal record medium as claimed in claim 79 wherein said signal is digital data or an analog signal.

Claim 81. A video signal reproducing apparatus for reproducing a digital disc medium having recorded thereon a digitized video

signal and a recording control code for outputting at least an analog video signal, wherein said recording control code is arrayed in a playback mode control signal area provided at a beginning end of a recording track for controlling the mode of the playback state and/or in each header of a digital video signal divided into sectors, comprising:

detection means for detecting the state of the recording control code arrayed in said playback mode control signal area and/or in each header;

means for generating a recording scrambling signal and/or a recording inhibiting signal of the mode of the analog video signal based on a detection output of said detection means;

D/A conversion means for converting the digital video signal reproduced from the digital disc medium into an analog video signal;

annexing means for annexing said recording scrambling signal and/or said recording inhibiting signal in a pre-set area of a vertical blanking period of the D/A converted analog video signal; and

outputting means for outputting said analog video signal.

Claim 82. The video signal reproducing apparatus as claimed in claim 81 wherein said recording scrambling signal is comprised of a combined signal of plural pseudo synchronization pulses and plural white peak signals, said combined signal being arrayed across plural horizontal periods in said vertical blanking period.

Claim 83. The video signal reproducing apparatus as claimed in claim 81 wherein said recording scrambling signal is a signal obtained on changing the phase of at least a portion of a color burst signal.

Claim 84. The video signal reproducing apparatus as claimed in claim 81 wherein said recording inhibiting signal is a coded signal coded with plural bits and arrayed in a pre-set horizontal period within said vertical blanking period.

Claim 85. The video signal reproducing apparatus as claimed in claim 84 wherein said coded signal is a generation limitation instructing signal instructing limitation on the recording generation.

Claim 86. A method for reproducing a digital disc medium having recorded thereon a digitized video signal and a recording control code for outputting at least an analog video signal, wherein said recording control code is arrayed in a playback mode control signal area provided at a beginning end of a recording track for controlling the mode of the playback state and/or in each header of a digital video signal divided into sectors, comprising:
detecting the state of the recording control code arrayed in said playback mode control signal area and/or in each header;
generating a recording scrambling signal and/or a recording inhibiting signal of the mode of the analog video signal based on a detection output of said detection means;

converting the digital video signal reproduced from the

digital disc medium into an analog video signal;

annexing said recording scrambling signal and/or said recording inhibiting signal in a pre-set area of a vertical blanking period of the converted analog video signal; and

outputting said analog video signal having annexed thereto said recording scrambling signal and/or the recording inhibiting signal.

Claim 87. The video signal reproducing method as claimed in claim 86 wherein said recording scrambling signal is comprised of a combined signal of plural pseudo synchronization pulses and plural white peak signals, said combined signal being arrayed across plural horizontal periods in said vertical blanking period.

Claim 88. The video signal reproducing method as claimed in claim 86 wherein said recording scrambling signal is a signal obtained on changing the phase of at least a portion of a color burst signal.

Claim 89. The video signal reproducing method as claimed in claim 86 wherein said recording inhibiting signal is a coded signal coded with plural bits and arrayed in a pre-set horizontal period within said vertical blanking period.

Claim 90. The video signal reproducing method as claimed in claim 86 wherein said coded signal is a generation limitation instructing signal instructing limitation on the recording generation.

Claim 91. A combination apparatus of a video signal reproducing apparatus and a recording apparatus for reproducing a digital disc medium having recorded thereon a digitized video signal and a video

[illegible]

means for generating a recording scrambling signal of the mode of the analog video signal based on a detection output of said detection means;

outputting means for outputting said analog video signal;
inputting means for inputting said analog video signal;

recording means for recording said input analog video signal
on an analog video record medium.

67

recording means for recording said input analog video signal

on an analog video record medium; wherein the analog video signal reproduced from said digital disc medium is re-recorded analogically or digitally.

Claim 93. The combination apparatus of the video signal reproducing apparatus and the recording apparatus as claimed in claim 92 wherein said video recording inhibiting means for responding to the video recording inhibiting signal of said input analog video signal enables a video recordable state depending on the generation mode of said video recording inhibiting signal.

Claim 94. A combination method of a video signal reproducing method and a recording method for reproducing a digital disc medium having recorded thereon a digitized video signal and a video recording control code, reproducing at least the analog video signal and recording the outputted signal, wherein said video recording control code is arrayed in a playback mode control signal area provided at a beginning end of a recording track for controlling the mode of the playback state and/or in each header of the digital video signal divided into sectors, comprising:

detecting the state of the recording control code arrayed in said playback mode control signal area and/or in each header;

generating a video recording scrambling signal of the mode of the analog video signal based on a detection output; converting the digital video signal reproduced from the digital disc medium into an analog video signal;

annexing said recording scrambling signal in a pre-set area

of a vertical blanking period of the converted analog video signal;
outputting said analog video signal;
inputting said analog video signal;
effecting automatic amplitude adjustment of responding to said
video recording scrambling signal of said input analog signal; and
recording said input analog video signal on an analog video
record medium.

Claim 95. A combination method of a video signal reproducing method
and a recording method for reproducing a digital disc medium having
recorded thereon a digitized video signal and a video recording
control code, reproducing at least the analog video signal and
recording the outputted signal, wherein said video recording
control code is arrayed in a playback mode control signal area
provided at a beginning end of a recording track for controlling
the mode of the playback state and/or in each header of the digital
video signal divided into sectors, comprising:

detecting the state of the recording control code arrayed in
said playback mode control signal area and/or in each header;

generating a video recording inhibiting signal of the mode of
the analog video signal based on a detection output; converting
the digital video signal reproduced from the digital disc medium
into an analog video signal;

annexing said recording inhibiting signal in a pre-set area
of a vertical blanking period of the converted analog video signal;
outputting said analog video signal;

inputting said analog video signal; and

effecting video recording inhibition responsive to said video recording inhibiting signal of said input analog signal when analogically or digitally recording said input analog video signal on a video recording medium.

Claim 96. The combination method of the video signal reproducing method and the recording method as claimed in claim 95 wherein said video recording inhibiting means responding to the video recording inhibiting signal of said input analog video signal enables a video recordable state depending on the generation mode of said video recording inhibiting signal.

Claim 97. A digital disc medium for coping with a method for reproducing a video signal comprising detecting the state of a recording control code arrayed in a playback mode control signal area and/or in each header of a digital video signal divided into sectors, generating a recording scrambling signal and/or a recording inhibiting signal of the mode of the analog video signal based on a detection output; converting the digital video signal reproduced from the digital disc medium into an analog video signal; annexing said recording scrambling signal and/or said recording inhibiting signal in a pre-set area of a vertical blanking period of the converted analog video signal; and outputting said analog video signal having annexed thereto said recording scrambling signal and/or the recording inhibiting signal; wherein the improvement resides in that it has recorded thereon the

video recording control code along with a digitized video signal, said video recording control code being arrayed in a playback mode control signal area provided at a beginning portion of a recording track for controlling the mode of the playback state and/or in each header of the digital video signal divided into sectors.

Claim 98. The digital disc medium as claimed in claim 97 wherein said video recording control code signal is a signal functioning for generating a combination signal of plural pseudo synchronization pulses and plural white peak signals across plural horizontal periods within said vertical blanking period.

Claim 99. The digital disc medium as claimed in claim 97 wherein said video recording control code signal is a signal functioning for changing the phase of at least a portion of a color burst signal.

Claim 100. The digital disc medium as claimed in claim 97 wherein said video recording control code signal is a signal functioning for generating a signal coded with plural bits in a pre-set horizontal period within said vertical blanking period.